CLAIMS

1. A process solution applying apparatus comprising:

a substrate holding mechanism for holding a substrate;

a process solution supplying system for applying process solution in a prescribed amount to the substrate held by the substrate holding mechanism, said process solution supplying system having a supplying mechanism for changing a rate at which the process solution is supplied; and

a substrate rotating mechanism for rotating the substrate holding mechanism, thus rotating the substrate at a predetermined speed to spread the process solution by virtue of centrifugal force and to coat the substrate with the process solution.

2. An apparatus according to claim 1, further comprising a control device for controlling the supplying mechanism, said control device having an input section for receiving data representing the type of the resist solution and a supply speed control section for determining a rate of applying the resist solution in accordance with the type of the process solution and for driving the supplying mechanism.

3. An apparatus according to claim 2, wherein the rate of applying the process solution has such a value that the process solution applied in the prescribed

amount forms a film having a uniform thickness on an entire surface of the substrate.

4. An apparatus according to claim 3, wherein the process solution is applied each time in an amount of 2.0 mL or less.

5. An apparatus according to claim 1, wherein a plurality of resist solution supplying systems are provided for supplying different types of resist solutions.

6. An apparatus according to claim 5, further comprising a control device for controlling the supplying mechanism, said control device having an input section for receiving data representing the type of the process solution to be applied, a selection section for selecting one of the process solution supplying systems in accordance with the type of the process solution to be applied, and a supply speed control section for determining a rate of applying the process solution through the selected process solution supplying system and for driving the supplying mechanism.

7. An apparatus according to claim 1, wherein said supplying mechanism has a positive-displacement pump for drawing and discharging a prescribed amount of process solution and a stepping motor for driving the positive-displacement pump and changing a rate of discharging the process solution when controlled in

terms of rotation speed.

8. An apparatus according to claim 1, wherein each of the process solution supplying systems has a replaceable supply tank holding the process solution to be applied, and the supplying mechanism has a detecting section for detecting amounts of process solution remaining in the supply tanks, in accordance with operation of the process solution supplying systems.

9. An apparatus according to claim 1, wherein each of the process solution supplying systems has a replaceable filter through which the process solution to be applied passes, and the supplying mechanism has a detecting section for detecting the time at which the filter of each process solution supplying system is to be replaced, in accordance with operation of the process solution supplying system.

10. A process solution applying method comprising:

a substrate holding step of holding a substrate;

a process solution discharging step of discharging process solution to apply the process solution to the substrate in a predetermined amount at a rate which accords with the type of the process solution, thereby to form a film having high thickness uniformity; and

a substrate rotating step for rotating the substrate at a predetermined speed, thereby to spread the process solution over the substrate by virtue of centrifugal force.

11. A method according to claim 10, wherein the process solution is resist solution and applied each time in an amount of 2.0 mL or less.

12. A method according to claim 10, further comprising a step of controlling a rotation speed of the substrate after the process solution has been completely applied, thereby to form a film having a desired thickness.

13. A method according to claim 10, further comprising a step of determining the speed of discharging the process solution, in accordance with the type of the process solution.